

FORM PTO-1590 (Modified)  
(REV 4-1-98)

U.S. DEPARTMENT OF COMMERCE PATENT AND TRADEMARK OFFICE

ATTORNEY'S DOCKET NUMBER

TRANSMITTAL LETTER TO THE UNITED STATES  
DESIGNATED/ELECTED OFFICE (DO/EO/US)  
CONCERNING A FILING UNDER 35 U.S.C. 371

PA980003

U.S. APPLICATION NO. (IF KNOWN, SEE 37 CFR

09/700141

INTERNATIONAL APPLICATION NO.  
PCT/EP99/03283INTERNATIONAL FILING DATE  
12 May 1999 (12.05.99)PRIORITY DATE CLAIMED  
14 May 1998 (14.05.98)

## TITLE OF INVENTION

CONSUMER REPLACEABLE DATA PLAYER DOOR

## APPLICANT(S) FOR DO/EO/US

Achuthan Srikumar

Applicant herewith submits to the United States Designated/Elected Office (DO/EO/US) the following items and other information:

1. ☒ This is a **FIRST** submission of items concerning a filing under 35 U.S.C. 371.
2. ☐ This is a **SECOND** or **SUBSEQUENT** submission of items concerning a filing under 35 U.S.C. 371.
3. ☒ This is an express request to begin national examination procedures (35 U.S.C. 371(f)) at any time rather than delay examination until the expiration of the applicable time limit set in 35 U.S.C. 371(b) and PCT Articles 22 and 39(1).
4. ☒ A proper Demand for International Preliminary Examination was made by the 19th month from the earliest claimed priority date.
5. ☒ A copy of the International Application as filed (35 U.S.C. 371 (c) (2))
  - a. ☒ is transmitted herewith (required only if not transmitted by the International Bureau).
  - b. ☒ has been transmitted by the International Bureau.
  - c. ☐ is not required, as the application was filed in the United States Receiving Office (RO/US).
6. ☐ A translation of the International Application into English (35 U.S.C. 371(c)(2)).
7. ☒ A copy of the International Search Report (PCT/ISA/210). attached to Item 13
8. ☒ Amendments to the claims of the International Application under PCT Article 19 (35 U.S.C. 371 (c)(3))
  - a. ☐ are transmitted herewith (required only if not transmitted by the International Bureau).
  - b. ☐ have been transmitted by the International Bureau.
  - c. ☐ have not been made; however, the time limit for making such amendments has NOT expired.
  - d. ☒ have not been made and will not be made.
9. ☐ A translation of the amendments to the claims under PCT Article 19 (35 U.S.C. 371(c)(3)).
10. ☒ An oath or declaration of the inventor(s) (35 U.S.C. 371 (c)(4)).
11. ☒ A copy of the International Preliminary Examination Report (PCT/IPEA/409).
12. ☐ A translation of the annexes to the International Preliminary Examination Report under PCT Article 36 (35 U.S.C. 371 (c)(5)).

## Items 13 to 20 below concern document(s) or information included:

13. ☒ An Information Disclosure Statement under 37 CFR 1.97 and 1.98. with references attached
14. ☒ An assignment document for recording. A separate cover sheet in compliance with 37 CFR 3.28 and 3.31 is included.
15. ☒ A **FIRST** preliminary amendment.
16. ☐ A **SECOND** or **SUBSEQUENT** preliminary amendment.
17. ☐ A substitute specification.
18. ☐ A change of power of attorney and/or address letter.
19. ☒ Certificate of Mailing by Express Mail 20. Return Postcard Receipt

XXXXXXXXXXXXXXXXXXXX

CERTIFICATE OF MAILING UNDER 37 CFR 1.10

EL694385003US

09 November 2000

"Express Mail" mailing no.

Date of Deposit

I hereby certify that this application is being deposited with the United States Postal Service "Express Mail Post Office to Addressee" service under 37 CFR 1.10 on the date indicated above and is addressed to the Assistant Commissioner for Patents, Washington, D.C. 20231.

David A Fornarotto

Typed or printed name of person  
mailing application

*David A Fornarotto*  
Signature of person mailing  
application

U.S. APPLICATION NO. (IF KNOWN, SEE 37 CFR

INTERNATIONAL APPLICATION NO.

ATTORNEY'S DOCKET NUMBER

09/700141

PCT/EP99/03283

PA980003

21. The following fees are submitted:

CALCULATIONS PTO USE ONLY

BASIC NATIONAL FEE (37 CFR 1.492 (a) (1) - (5)) :

- ☐ Neither international preliminary examination fee (37 CFR 1.482) nor international search fee (37 CFR 1.445(a)(2)) paid to USPTO and International Search Report not prepared by the EPO or JPO ..... \$1000.00
- ☒ International preliminary examination fee (37 CFR 1.482) not paid to USPTO but International Search Report prepared by the EPO or JPO ..... \$860.00
- ☐ International preliminary examination fee (37 CFR 1.482) not paid to USPTO but international search fee (37 CFR 1.445(a)(2)) paid to USPTO ..... \$710.00
- ☐ International preliminary examination fee paid to USPTO (37 CFR 1.482) but all claims did not satisfy provisions of PCT Article 33(1)-(4) ..... \$690.00
- ☐ International preliminary examination fee paid to USPTO (37 CFR 1.482) and all claims satisfy provisions of PCT Article 33(1)-(4) ..... \$100.00

ENTER APPROPRIATE BASIC FEE AMOUNT =

860.00

Surcharge of \$130.00 for furnishing the oath or declaration later than months from the earliest claimed priority date (37 CFR 1.492 (e)).

☐ 20 ☐ 30

CLAIMS	NUMBER FILED	NUMBER EXTRA	RATE
Total claims	10 - 20 =	0	x \$18.00
Independent claims	3 - 3 =	0	x \$80.00

Multiple Dependent Claims (check if applicable). ☐

TOTAL OF ABOVE CALCULATIONS = 860.00

Reduction of 1/2 for filing by small entity, if applicable. Verified Small Entity Statement must also be filed (Note 37 CFR 1.9, 1.27, 1.28) (check if applicable).

☐

SUBTOTAL = 860.00

Processing fee of \$130.00 for furnishing the English translation later than months from the earliest claimed priority date (37 CFR 1.492 (f)).

☐ 20 ☐ 30

+

TOTAL NATIONAL FEE = 860.00

Fee for recording the enclosed assignment (37 CFR 1.21(h)). The assignment must be accompanied by an appropriate cover sheet (37 CFR 3.28, 3.31) (check if applicable).

☐

40.00

TOTAL FEES ENCLOSED = 900.00

Amount to be:  
refunded

\$

charged

\$ 900.00

- ☐ A check in the amount of \_\_\_\_\_ to cover the above fees is enclosed.
- ☒ Please charge my Deposit Account No. 07-0832 in the amount of \$900.00 to cover the above fees.  
A duplicate copy of this sheet is enclosed.
- ☒ The Commissioner is hereby authorized to charge any fees which may be required, or credit any overpayment to Deposit Account No. 07-0832 A duplicate copy of this sheet is enclosed.

NOTE: Where an appropriate time limit under 37 CFR 1.494 or 1.495 has not been met, a petition to revive (37 CFR 1.137(a) or (b)) must be filed and granted to restore the application to pending status.

SEND ALL CORRESPONDENCE TO:

Mr. Joseph S. Tripoli  
THOMSON multimedia Licensing Inc.  
Patent Department  
PO Box 5312  
Princeton, New Jersey 08540

SIGNATURE

Paul P. Kiel

NAME

40,677

REGISTRATION NUMBER

November 9, 2000

DATE

NOV 11 4 55 PM '00

DOCUMENT PROCESSING Page 2 of 2

09/700141

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Applicant : Achuthan Srikumar

422 Rec'd PCT/PTO 09 NOV 2000

Filed : Herewith

For : CONSUMER REPLACEABLE DATA PLAYER DOOR

PRELIMINARY AMENDMENT

Hon. Commissioner of Patents and Trademarks  
Washington, D.C. 20231

Sir:

In the US national phase application of PCT/EP99/03283 filed  
herewith, please enter the following amendments

## IN THE SPECIFICATION:

On Page 1, before line 1, insert

-- CONSUMER REPLACEABLE DATA PLAYER DOOR --.

## IN THE CLAIMS:

Please amend the originally filed claims as follows:

1. (AMENDED) A portable data player and/or recorder [having] comprising a casing [(1)] and a door [(2)], said door [(2)] being rotatably attached about an axis AA' to said casing [(1)], said axis AA' defining a first and a second directions, the door [(2)] and the casing [(1)] being able relatively to each other of at least two ranges of angular positions, a first range of positions in which the door [(2)] is widely open, a second range of position in which the door [(2)] is open and of a closed position, said last position being a position in which the door [(2)] closes an opening [(4)] of said casing [(1)], wherein, in the first range of angular positions, the door [(2)] can slide along axis AA' in the first direction up to a first axial position in which a first shoulder [(14, 15, 22)] of the door [(2)] is abutting against a first shoulder [(19, 20, 21)] of the casing [(1)], and wherein, in the first range of angular positions, said door [(2)] can slide along axis AA' in the second axial direction up to a second axial position in which the door [(2)] and the casing [(1)] are disengaged from one another, and wherein, in the second range of angular position and the first axial position, a second shoulder [(18, 18')] of the door [(2)] is abutting against a second shoulder [(11)] of the casing [(1)] preventing any translation movement of the door [(2)] along axis AA' in the second direction.

2. (AMENDED) Portable data player and/or recorder according to claim 1 wherein said casing [(1)] and door [(2)] are fitted with hinges [(7,8)] and brackets [(16,17)] for the attachment of the door [(2)] to the casing [(1)] and wherein the hinges [(7, 8)] are in the form of shaft springing from a face [(19, 20)] of first recesses [(5, 6)] of the casing [(1)] said faces being the first shoulder, and wherein the brackets [(16, 17)] are in the form of holes of first ribs [(14, 15)] that spring outwardly from a main face [(12)] of the door [(2)].

3. (AMENDED) Portable data player and/or recorder according to [one of claim 1 or 2] claim 1, wherein the second shoulder [(18)] of the door [(2)] is in the form of a second rib [(18)] that springs from a main face [(12)] of said door [(2)] and wherein the second shoulder of the casing is in the form of a face [(11)] of a hole [(10)].

4. (AMENDED) Portable data player and/or recorder according to [one of claims 1, 2 or 3] claim 1, wherein the door [(2)] and casing [(1)] are fitted one with a tongue [(24)] and the other with a recess [(23)] in a third shoulder [(11)] whose dimensions are such that the tongue [(24)] can enter the recess [(23)], the tongue [(24)] being in abutment against the third shoulder [(11)] in at least a part of the range of open positions, said tongue [(24)] being in a position in which it penetrates in said recess [(23)] of the third shoulder in one of the open positions.

5. (AMENDED) Portable data player [and or] and/or recorder according to [one of claims 1, 2 or 3] claim 1, wherein the third shoulder [(11)] is in the form of a face [(11)] of a hole [(10)] in the casing [(1)], the tongue [(24)] being an extension that springs outwardly from said face [(11)] and wherein the recess [(23)] is located in a third rib [(18)] that spring outwardly toward the inside of the casing [(1)] from a main face [(12)] of the door [(2)].

6. (AMENDED) Portable data player [and or] and/or recorder according to claim 5 wherein the third and second shoulder of the door [(2)] are in the form of one and the same rib [(18)].

7. (AMENDED) A portable data player and/or recorder [having] comprising a casing [(1)] and a door [(2)], the door [(2)] being rotatably attached about an axis AA' to said casing [(1)], the door [(2)] and the casing [(1)] being able relatively to each other of at least two ranges of angular positions in which the door [(2)] is open and of a closed position, said closed position being a position in which the door [(2)] closes an opening [(4)] of said casing [(1)], wherein the door [(2)] and casing [(1)] are fitted one with a shoulder [(1)] and the other with a rib [(18)], the rib [(18)] being in abutment against the shoulder [(1)] in one of the range of angular positions.

8. (AMENDED) Portable data player and/or recorder according to claim 7, wherein the door [(2)] and casing [(1)] are fitted one with a tongue [(24)] and the other with a recess [(23)] whose dimensions are such that the tongue [(24)] can enter the recess [(23)], the tongue [(24)] being in a position in which it penetrates in the recess [(23)] in one of the open positions.

9. (AMENDED) Portable data player and/or recorder according to claim 8, wherein the tongue [(24)] is fitted on one of the rib [(18)] and shoulder [(11)] and wherein the recess [(23)] is fitted on the other one of the rib [(18)] and shoulder [(11)].

10. (AMENDED) Door [(2)] of a portable data player and/or recorder, [said door having] comprising a main face [(12)] and three ribs [(14,15,18)], two first [(14,15)] and a third, perpendicular to the main face, the first two ribs [(14,15)] having holes [(16,17)], having an axis AA', and suitable to form brackets of the door [(2)], and the third [(18,18'')] having a form such that it is not secant to planes containing axis AA' and sensibly perpendicular to the main face [(12)] of the door [(2)] and secant to planes containing axis AA' and forming an angle with the plane of the main face [(12)] of the door [(2)], which are less than about 90°.

#### IN THE ABSTRACT:

Please add the Abstract as follows:

-- A portable data player and or recorder having a door which can be easily assembled or disassembled from a casing of the disk player. The door is fitted with brackets which, in a wide open angular position of the door, can slide in a first direction along hinges of the casing up to an abutting position. In an open position a

rib of the door is an abutment against a shoulder of the casing, thus preventing any disassembling of the door from the casing. Disassembling from the casing is made possible if the door is wide open. Then the shoulder does not prevent the sliding of the brackets of the door in a second direction, opposite the first one, along hinges of the casing. The invention makes it easy to change the door without any tooling, so that a user may choose the colour of the door according to their taste.--

## REMARKS

The title has been added to Page 1 of the application. No new matter has been added.

The claim amendments have been made to eliminate multiple dependencies, remove reference indicia and to conform with the United States practice. No new matter has been added.

To meet the requirements of the United States, the Abstract (as originally filed in the PCT application) is added. No new matter has been added.

No fee is believed to have been incurred by virtue of this amendment. However if a fee is incurred on the basis of this amendment, please charge such fee against deposit account 07-0832

Respectfully submitted,  
Achuthan Srikumar

  
Paul P. Kiel, Attorney  
Registration No. 40,677  
609/734-9650

THOMSON multimedia Licensing Inc.  
Patent Operation  
PO Box 5312  
Princeton, NJ 08543-5312

November 9, 2000

The invention is in the field of portable data player and or recorder, and more particularly in the field of compact disk player.

422 Rec'd PCT/PTO 09 NOV 2000

A portable data player such as magnetic recorder or compact disk player comprises a casing having an opening. Said opening of the casing may be closed or open according to the position of a door which is rotatably attached to said casing, for instance by means of hinges and buckets. The axis of rotation of the door relatively to the casing is thereafter referred to as axis AA'. Usually the door is assembled to the casing in a factory and cannot be disassembled easily by the user of such portable data player or compact disk player.

The compact disk door is one of the most important external part of the portable compact disk player since it has a large surface and gives the compact disk player a great part of its look, distinguishing it from others.

Furthermore the compact disk player is supported to protect the portable device from external influence and therefore gets all the external impacts which may, for instance, cause scratches on it and make the player looked wearied out.

The purpose of the invention is a portable disk player with a door that can be easily assembled or disassembled from the casing by the user without the need for any tooling. Although the invention will thereafter be described for a disk player, the principles shown in the following description could apply to any other data player.

With such an easy assembled door, the user may choose a colour of door on shelves, that fits best his taste. Also several doors can be sale with every portable player, so that the user has a choice to assemble one of the doors he likes best one day or another door the other day.

According to the invention, the door, when attached to the casing, is able of at least two ranges of angular open positions, and of a third position in which the door is closed, closing the opening of the casing.

In a first range of angular positions referred to as widely open, the door is rotatively attached to the casing. For instance the hinges of the casing are set into the brackets of the doors. In this first range of angular position the bucket can slide

along the hinges in a first axial direction up to a first axial position in which a first shoulder of the door is in abutment against a first shoulder of the casing.

On the reverse, when the door, still in a widely open position, is slid along axis AA', in the second direction of said axis, the door will reach a second axial position in which said door is detached from the casing.

When the door is abutting against the first shoulder, then it can be rotated up to a second range of angular positions referred to as open. In said second range of open positions a rib or more generally a second shoulder of the door is in abutment against a second shoulder of the casing. In said second range of open positions, the brackets or any other part of the door are abutting, for instance, on their right side to a first shoulder or set of shoulders of the casing while a left surface of a rib, that springs sensibly perpendicularly to the axis of rotation of the door, from the main surface of the door is abutting on a second shoulder of the casing.

In this second range of positions, the door cannot slide anymore, because its movement along the axis AA' of rotation, toward the left, is blocked because of the first shoulder, while the movement of rotation toward the right is blocked by the second shoulder of the casing.

Said abutments on the right and left side are exerting their locking function of sliding, while the door is in the second range of positions and also when the door is in a third position known as a closed position in which the door closes the opening of the casing.

To sum up the invention is about portable data player and/or recorder having a casing and a door, said door being rotatably attached about an axis AA' to said casing, said axis AA' defining a first and a second directions, the door and the casing being able relatively to each other of at least two ranges of angular positions, a first range of positions in which the door is widely open, a second range of position in which the door is open and of a closed position, said last position being a position in which the door closes an opening of said casing, wherein, in the first range of angular positions, the door can slide along axis AA' in the first direction up to a first axial position in which a first shoulder of the door is abutting against a first shoulder of the casing, and wherein, in the first range of angular positions, said door can slide



along axis AA' in the second axial direction up to a second axial position in which the door and the casing are disengaged from one another, and wherein, in the second range of angular position and the first axial position, a second shoulder of the door is abutting against a second shoulder of the casing preventing any translation movement of the door along axis AA' in the second direction.

The invention also proposes a portable data player and/or recorder having a casing and a door, the door being rotatably attached about an axis AA' to said casing, the door and the casing being able relatively to each other of at least two ranges of angular positions in which the door is open and of a closed position, said closed position being a position in which the door closes an opening of said casing, wherein the door and casing are fitted one with a shoulder and the other with a rib, the rib being in abutment against the shoulder in one of the range of angular positions.

There is also disclosed a door of a portable data player and/or recorder, said door having a main face and three ribs, two first and a third, perpendicular to the main face, the first two ribs having holes, having an axis AA', and suitable to form brackets of the door, and the third having a form such that it is not secant to planes containing axis AA' and sensibly perpendicular to the main face of the door and secant to planes containing axis AA' and forming an angle with the plane of the main face of the door, which are less than about 90°.

A preferred embodiment of the invention will now be described in accordance with the attached drawings in which

Fig.1 is a perspective view of a casing embodying the invention .

Fig.2 is a perspective view of the rear of a casing and a door embodying the invention ;

Fig.3 is side view of the door and casing represented in figure 2;

First it is to be noted that the invention is about the attachment of the door to the casing of a compact disc player. It is the reason why, in figures 1, 2 and 3, only those features which are of interest for the invention have reference numbers and will thereafter be described.

Figure 1 is a perspective view of a casing 1 and door 2.

Figure 2 is a front perspective view of the rear part of a casing 1 and a door 2 according to the invention. Figure 3 is a side view of the same casing 1 and door 2. Figures 2 and 3 are focused mainly to the attachment of door 2 to casing 1 and to the means to make such an attachment, but the forms which are represented in figures 2 and 3, are near from the usual form of compact disk player so that the man skill in the art can more readily identify the different piece parts. In figures 1, 2 and 3 the element having the same functions are referred to by the same reference number.

The casing 1 represented in figure 1, has a main base face 3, which is generally parallel to the plan of a compact disk, when said disk, not represented, is in the casing in a position to be read. The top of said casing has an opening 4. The rear part of the casing has two recesses 5 and 6. Those recesses are in form of hole from a top surface 9 of the casing and also from the rear lateral surface of the casing 1. From a face 19, 20 of each of said recesses 5, 6 springs a shaft 7, 8 respectively. The top face 9 of the casing 1 is also fitted with a hole 10 surrounded by faces, and among those faces an abutting face 11. The top face 9 of the casing 1 is a face which is parallel to main base face 3 and at a distance from said base face. Said face may be present only at the rear of the casing as represented on figures 1 and 2 and can be a stepped face, having different levels.

The door is represented on figures 1, and 2 in the general form of a plate 12 with a rounded end 23. For what concerns the mounting of the door 2 on the casing 1, the door is fitted with three ribs 14, 15, 18 springing sensibly perpendicularly to the plan of the main plate 12. Two of those ribs, 14 and 15 are fitted with holes 16, 17 respectively.

The functioning of said casing will now be explained. First it is to be stated that when it is spoken of an angular position of the door relatively to the casing, it is spoken of the angle  $\alpha$  of a dihedral formed between the base plan 3 of the casing and the plan of the main plate 12 forming the door 2. In the form represented in figures 1, 2 and 3, those planes are easily identified. However in a usual disk player those planes may not be physically present, because for instance, the door and or

the casing, may have for a esthetic or other reasons spherical forms which are almost planes but not quite plane. In said cases, which are most common, the plane corresponding to the base plane 3 of the casing and the plane corresponding to the base plane 3 of the casing and the plane corresponding to the main pte 12 of the door 2 are fictitious planes. However, it can be said that when the door is in the closed position the angle  $\alpha$  of the dihedral between those fictitious planes is 0, and that said angle increase along with the opening of the door.

In figures 2 and 3 the door 2 has been represented in one of the open position of the door, the door 2 being detached from the casing 1. The mounting of the door is as follows. First the door 2 is brought near the casing 1 in a wide open angular position the ribs 14 and 15 being in the recesses 5 and 6. Then the door 2 is translated towards the left side, parallels to axis AA'. By this movement the shafts 7 and 8 enter in the holes 16 and 17 of the ribs 14 and 15 respectively. The door 2 will slide along axis AA' until the left hand side of ribs 14 and 15 or at least one of them abuts against one of the faces 19, 20 of the recess 5, 6. In this position it may be understood that the shafts 7 and 8 have the function of hinges while the holes 16 and 17 of the ribs 14 and 15 have the function of buckets. When the door is further rotated towards a closed position it will reach a position in which third rib 18 will enter hie 10 of the casing, the right face of rib 18 abutting on a face 11 of said hole 10. Said position when said third rib 18 starts to enter hole 10, or said an other way, when the right face of third rib 18 begins to abut against a face 11 of the casing 1, is the intermediate position between has been called the range of wide open positions and the range of open positions.

It is to be noted that the present invention which has been here above described in relation with figures 1, 2 and 3 represents a particular embodiment so that the invention is well understood. The invention is not to be limited to this single embodiment given as an example some alternative embodiments carrying the invention will thereafter be described.

First it is to be understood that it is equivalent for the invention that the brackets are on the door and the hinges on the casing as represented on the figures, or that some or all brackets are on the casing and some or all hinges on the door.

There could be more than two brackets and hinges, for instance three or more. There also could be only one brackets and hinge, if it is long enough for preventing looseness.

Second it is to be understood that the first abutting faces of the casing 1 which have been represented as being faces 19 and 20 of the recesses 5 and 6 could be any shoulder as represented as 21 of the casing, said shoulder being made as represented in 21, by a vertical step of the surface 9, or by a local extension of one of the walls of the casing 1. Said step or extension 21 is a shoulder which extends perpendicularly to axis AA'. In the case where the first abutment shoulder of the casing would be the step or extension 21 of a wall of the casing 1, the corresponding abutting part of the door would be a part 22 of the lateral surface of the door 2, said lateral part 22 of the surface being perpendicular to axis AA'. It is also to be noted that there could be no need of a shoulder specially devoted to maintain the door 2 on its left hand side, which is here the first axial direction if for instance the holes 16 and 17 of the ribs 14 and 15 were blind holes, having a bottom, said bottom abutting on an end of shafts 7 or 8. In said case the first abutting face would be said ends or one of said ends.

Third it is also to be understood that the third rib 18, and face 11 of the hole 10 of the casing 1 could be replaced by a rib 18' placed at a side of the door 2, said rib then abutting on a wall of the casing 1, when the door reaches the beginning of the range of the open positions. It is the reason why it is generally spoken of a second shoulder of the door abutting on a second shoulder of the casing. In fact what is important for rib 18, is that it has a form such that it is not secant to a planes containing axis AA' and forming an angle with the main face (12) of the door (2) which is superior to an angle which is a limit between a wide open position of the door and an open position of the door, and secant to planes containing axis AA' and forming an angle with the plane of the main face (12) of the door (2) which is inferior to said angle which is a limit between a wide open position of the door and an open position of the door. Said limit angle could have for instance a value around 90°.

An interesting feature of the invention will now be described in relation with figures 2 and 3 only. This feature is devoted to maintain the door in one at least of

the positions of the open position range. Said feature is to facilitate the introduction or exchange of a compact disk.

It has been explained that rib 18 is in the second range of open positions in abutment against a shoulder 11 of the casing 1. In the preferred embodiment said rib 18 is fitted with a hole 23. The shoulder 11 is fitted with a tongue 24 extending outwardly from the surface of said shoulder 11. The functioning is as follows. When opening the door from the closed position, the tongue 24 slides against the surface of the rib 18, up to the point where said tongue will enter into hole 23. The entering movement takes place because of a slight elasticity of the rib 18 and of slight deformation of the door which is made in a deformable material such as plastic for instance a polycarbonate. To ease the movement of penetration and retraction the edges of hole 23 are chamfered edges. Also it is easier if the edges of the tongue 24 are chamfered. There is only one such hole 23, but if several maintained open positions were needed it is possible of course to have several hole 23 on rib 18. Said feature has been explained in relation with the easy fitting door 2, but it could as well be done with a fixed door. It is to be noted that for this feature it is equivalent that the tongue 24 is on the door and the hole on the casing. The hole can be a through hole as represented figures 2 and 3 or a blind hole or a recess or a lock notch.

In this aspect the invention is for a portable data player and or recorder having a casing and a door, said casing and door being fitted with hinges and brackets so that the door is rotatably attached about an axis AA' to said casing, the door and the casing being able relatively to each other of a range of angular positions in which the door is open and of a closed position, said last position being a position in which the door closes an opening of said casing, data player and or recorder wherein the door and casing are fitted one with a tongue and the other with a recess in a shoulder whose dimensions are such that the tongue can enter the recess, the tongue being in abutment against the shoulder in at least a part of the range of open positions said tongue being in a position in which it penetrates in the recess in one of the open positions.

## CLAIMS

1. A portable data player and/or recorder having a casing (1) and a door (2), said door (2) being rotatably attached about an axis AA' to said casing (1), said axis AA' defining a first and a second directions, the door (2) and the casing (1) being able relatively to each other of at least two ranges of angular positions, a first range of positions in which the door (2) is widely open, a second range of position in which the door (2) is open and of a closed position, said last position being a position in which the door (2) closes an opening (4) of said casing (1), wherein, in the first range of angular positions, the door (2) can slide along axis AA' in the first direction up to a first axial position in which a first shoulder (14, 15, 22) of the door (2) is abutting against a first shoulder (19, 20, 21) of the casing (1), and wherein, in the first range of angular positions, said door (2) can slide along axis AA' in the second axial direction up to a second axial position in which the door (2) and the casing (1) are disengaged from one another, and wherein, in the second range of angular position and the first axial position, a second shoulder (18, 18') of the door (2) is abutting against a second shoulder (11) of the casing (1) preventing any translation movement of the door (2) along axis AA' in the second direction.

2. Portable data player and/or recorder according to claim 1 wherein said casing (1) and door (2) are fitted with hinges (7,8) and brackets (16,17) for the attachment of the door (2) to the casing (1) and wherein the hinges (7, 8) are in the form of shaft springing from a face (19, 20) of first recesses (5, 6) of the casing (1) said faces being the first shoulder, and wherein the brackets (16, 17) are in the form of holes of first ribs (14, 15) that spring outwardly from a main face (12) of the door (2).

3. Portable data player and/or recorder according to one of claim 1 or 2 wherein the second shoulder (18) of the door (2) is in the form of a second rib (18) that springs from a main face (12) of said door (2) and wherein the second shoulder of the casing is in the form of a face (11) of a hole (10).

4. Portable data player and/or recorder according to one of claims 1, 2 or 3 wherein the door (2) and casing (1) are fitted one with a tongue (24) and the other with a recess (23) in a third shoulder (11) whose dimensions are such that the

tongue (24) can enter the recess (23), the tongue (24) being in abutment against the third shoulder (11) in at least a part of the range of open positions, said tongue (24) being in a position in which it penetrates in said recess (23) of the third shoulder in one of the open positions.

5 5. Portable data player and or recorder according to one of claims 1, 2 or 3, wherein the third shoulder (11) is in the form of a face (11) of a hole (10) in the casing (1), the tongue (24) being an extension that springs outwardly from said face (11) and wherein the recess (23) is located in a third rib (18) that spring outwardly toward the inside of the casing (1) from a main face (12) of the door (2).

10 6. Portable data player and or recorder according to claim 5 wherein the third and second shoulder of the door (2) are in the form of one and the same rib (18).

15 7. A portable data player and/or recorder having a casing (1) and a door (2), the door (2) being rotatably attached about an axis AA' to said casing (1), the door (2) and the casing (1) being able relatively to each other of at least two ranges of angular positions in which the door (2) is open and of a closed position, said closed position being a position in which the door (2) closes an opening (4) of said casing (1), wherein the door (2) and casing (1) are fitted one with a shoulder (1) and the other with a rib (18), the rib (18) being in abutment against the shoulder (11) in one of the range of angular positions.

20 8. Portable data player and/or recorder according to claim 7, wherein the door (2) and casing (1) are fitted one with a tongue (24) and the other with a recess (23) whose dimensions are such that the tongue (24) can enter the recess (23), the tongue (24) being in a position in which it penetrates in the recess (23) in one of the open positions.

25 9. Portable data player and/or recorder according to claim 8, wherein the tongue (24) is fitted on one of the rib (18) and shoulder (11) and wherein the recess (23) is fitted on the other one of the rib (18) and shoulder (11).

30 10. Door (2) of a portable data player and/or recorder, said door having a main face (12) and three ribs (14,15,18), two first (14,15) and a third, perpendicular to the main face, the first two ribs (14,15) having holes (16,17), having an axis AA', and suitable to form brackets of the door (2), and the third (18,18') having a form such

that it is not secant to planes containing axis AA' and sensibly perpendicular to the main face (12) of the door (2) and secant to planes containing axis AA' and forming an angle with the plane of the main face (12) of the door (2), which are less than about 90°.



## ABSTRACT

A portable data player and or recorder has a door 2 which can be easily assembled or di-assembled from a casing 1 of the disk player. For this purpose the door 2 is fitted with brackets 16, 17 which, in a wide open angular position of the door, can slide in a first direction along hinges 7, 8 of the casing 1 up to an abutting position. In an open position a rib 18 of the door 2 is an abutment against a shoulder 11 of the casing 1, thus preventing any di-assembling of the door 2 from the casing 1. Di-assembling from the casing 1 is made possible if the door 2 is wide open. Then no shoulder prevent the sliding of the brackets of the door in a second direction, opposite the first one, along hinges 7, 8 of the casing.

The invention makes it easy to change the door without any tooling, so that a user may choose the colour of the door according to its instant taste.

FIGURE 1

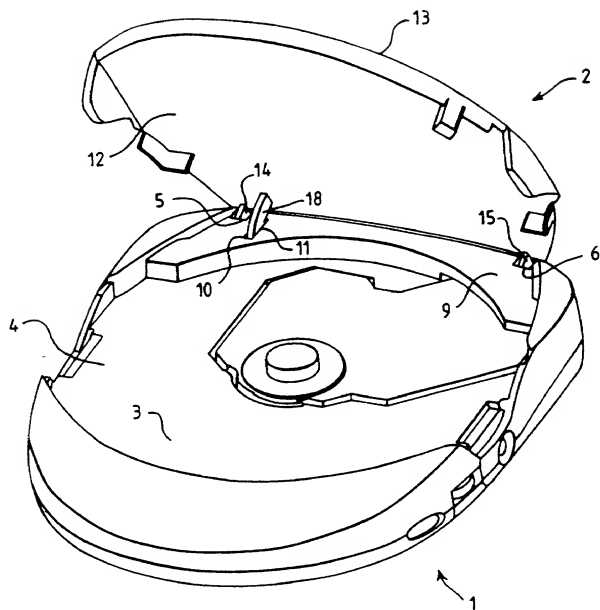


FIG.1

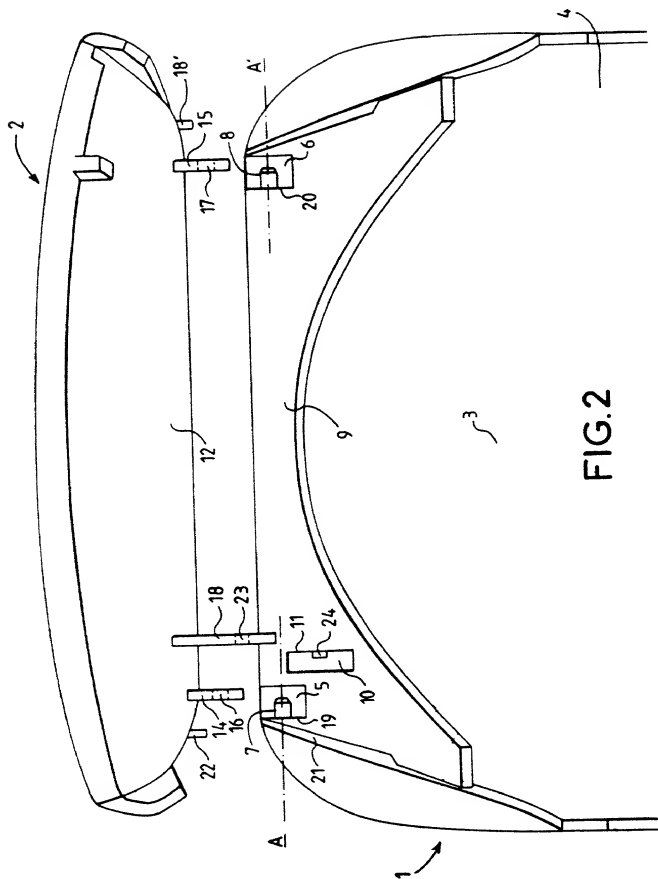


FIG. 2

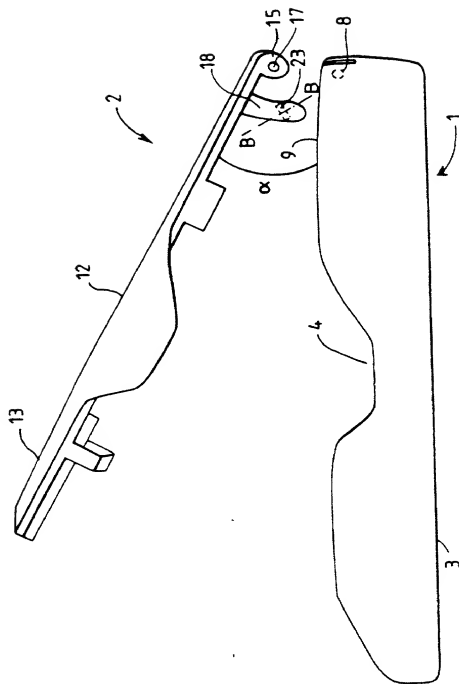


FIG. 3

DECLARATION FOR UNITED STATES PATENT APPLICATION,  
POWER OF ATTORNEY, DESIGNATION OF CORRESPONDENCE ADDRESS

As a below named inventor, I hereby declare that my residence, post office address and citizenship are as stated below next to my name, and that I believe I am the original, first and sole inventor (if only one name is listed below) or an original, first and joint inventor (if plural names are listed below) of the subject matter which is claimed and for which a patent is sought on the invention entitled

**CONSUMER REPLACEABLE DATA PLAYER DOOR**

the specification of which

(CHECK ONE) ( ) is attached hereto.

(XX) was filed on May 12, 1999, Application Serial. No. PCT/EP99/03283  
and was amended on .

I hereby state that I have reviewed and understand the contents of the above identified specification, including the claims, as amended by any amendment referred to above.

I acknowledge the duty to disclose information which is material to the examination of this application in accordance with 37 CFR 1.56(a).

I hereby claim foreign priority benefits under 35 USC 119 of any foreign application(s) for patent, utility model, design or inventor's certificate having a filing date before that of the application(s) on which priority is claimed:

Prior Foreign Application(s)			Priority Claimed	
Number	Country	Date Filed	Yes	No
98401162.7	EP	May 14, 1998	xx	

I hereby claim the benefit under 35 USC 120 of any US Application(s) listed below, and, insofar as the subject matter of each of the claims of this Application is not disclosed in the prior US application in the manner provided by the first paragraph of 35 USC 112, I acknowledge the duty to disclose information which is material to the examination of this application in accordance with 37 CFR 1.56(a).

Serial No.: \_\_\_\_\_ Filed: \_\_\_\_\_

I hereby declare that all statements made herein of my own knowledge are true and that all statements made on information and belief are believed to be true; and further that these statements were made with the knowledge that wilful false statements and the like so made are punishable by fine or imprisonment, or both, under of 18 USC 1001 and that such wilful false statements may jeopardize the validity of the application or any patent issued thereon.

I hereby appoint the following attorneys to prosecute this application and to transact all business in the Patent and Trademark Office connected therewith: Joseph S. Tripoli (Reg. No. 26,040), Dennis H. Irlbeck (Reg. No. 26,372), Eric Herrmann (Reg. No. 29,169) and Joseph J. Laks (Reg. No. 27,914) Telephone: (609) 734-9813.

Address all correspondence to Joseph S. Tripoli, Patent Operations - Thomson multimedia Licensing, Inc., CN 5312 - Princeton, New Jersey 08543-0028.

Signature: A. Srikumar Date: 11th day of September, 2000.

Sole or First Joint Inventor: Achuthan Srikumar

Citizenship: SG

Residence and Post Office Address:

Blk 256  
Serangoon Central Drive #03-42  
Singapore 550256  
Republic of Singapore